E19)
HENKEL KGAA *DE 10029933-A1
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**Oxocyclopentene derivative-containing dyes giving a wide variety of brilliant, intense shades on keratin fibers, especially human hair, without the need for an oxidizing component**

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Addnl. Data: GROSS W, HOEFFKES H, MARTIN H, MOELLER H, OBERKOBUSCH D

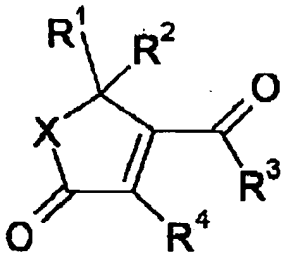
B(10-D1, 10-F2, 14-R1) D(7-B, 8-B6) E(6-A1, 6-A2C, 6-B1, 7-A3C, 7-B2, 10-F2A1, 25-E2, 25-E3) F(3-F2, 3-F16) .3

NOVELTY

Dyes for keratin fibers, especially human hair, contain an oxocyclopentene derivative.

DETAILED DESCRIPTION

Dyes for keratin fibers, especially human hair, contain an oxocyclopentene derivative of formula (I):



(I)

$R^1$ and $R^2$ = H or 1-4C alkyl or optionally form a ring;
$R^3$ and $R^4$ = H, 1-4C alkyl or aryl or optionally form a ring; and
X = $CH_2$-, C=O- or C=S-.

USE

Dyeing keratin fibers, especially human hair, especially by applying for 30 minutes and then rinsing-off or washing-off with a shampoo.

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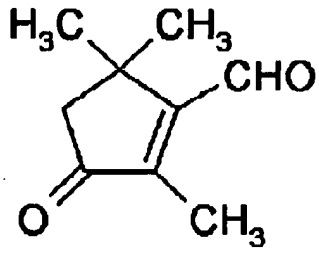
ADVANTAGE

Brilliant, intense dyeing at least comparable to those obtained using oxidation dyes can be obtained in the absence of an oxidizer. A wide range of shades e.g. turquoise, brown, yellow, orange and deep red can be obtained.

SPECIFIC COMPOUNDS

Among the 10 oxocyclopentene compounds specified in the claims are 2,5,5-trimethyl-oxocyclopent-1-ene carbaldehyde of formula (Ia), 6,7-dihydro-7-methyl-1,4(5H)-indanedione and 3-acetyl-2-methyl-2-cyclopenentene-1-one.



(Ia)

EXAMPLE

A composition which gave dark turquoise shades on hair on use for 30 minutes at 32°C comprised (A) 1 part of a gel comprising 2,5,5-trimethyl-oxocyclopent-1-ene carbaldehyde (6 g), Natrosol 250 HR (RTM : hydroxyethylcellulose thickener) (2 g) and water (balance) and (B) 1 part cream adjusted to pH 8.95 and comprising Texapon NSO (RTM : Na laurylether sulfate) (20 parts), Dehyton K (RTM : cocoamidopropylbetaine) (12.5 parts), Hydrenol D (RTM : cetearyl alcohol) (8.5 parts), Lorol (RTM : coco fatty alcohol) (2 parts),

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Eumulgin B2 (RTM : ceteareth-20) (0.75 parts), 4,4'-diamino-diphenylenediamine.$H_2SO_4$ (5.95 parts), ascorbic acid (0.1 parts), Na sulfite (0.1 parts), 25% ammonia (4.5 parts) and water (balance to 100 parts).

TECHNOLOGY FOCUS

Organic Chemistry - Preferred Compositions : The dyeing agents contain 0.03-65 (especially 1-40) mmol of (Ia,b,c) per 100 g, together with compounds containing primary or secondary amino or OH groups, especially primary or secondary amines, N-containing heterocyclics, aromatic OH compounds, aminoacids, oligopeptides based on 2-9 aminoacids and/or CH-active compounds, with very large numbers of specific compounds being listed in the claims for each of these categories. Also present in the dye compositions are:
(i) intensifiers such as piperidines, pyridines, imidazoles, pyrrolidines, pyrrolidones and pyrazoles;
(ii) nitrophenylenediamine-, nitroaminophenol-, anthraquinone- and indophenol-direct dyes at 0.01-20 wt.% of the dye composition;
(iii) ammonium-, alkali(ne earth)-, Al-, Mn-, Fe-, Co-, Cu- or Zn-salts;
(iv) oxidizers such as $H_2O_2$ at 0.01-6 wt.% of the solution used; and/or
(v) anionic, zwitterionic or nonionic surfactants.
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